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first and second sets of teeth of the first cylindrical pinion and the second cylindrical pinion having the same number of teeth and the same diameter and meshing with one another, a third cylindrical pinion (5) which is mounted to rotate with the first shaft, a fourth cylindrical pinion (5) which is mounted to rotate with the first shaft, a fifth cylindrical pinion (5) which is mounted to rotate with the intermediate shaft, the sets of teeth of the third cylindrical pinion and the fourth cylindrical pinion having the same number of teeth and the same diameter, a double-toothed face gear (38) mounted between and respectively meshing with the sets of teeth of the third cylindrical pinion and the fourth cylindrical pinion, the double-toothed face gear being able to rotate about a second shaft which forms an angle with the first shaft, wherein the double-toothed face gear (38) is provided with coupling teeth (39) for slideably coupling the rotation of the double-toothed face gear (38) to the rotation of the second shaft, and the direction of the coupling teeth being perpendicular to a plane of the coupling teeth of the double-toothed face gear.

2. The gear transmission as claimed in claim 1, wherein the double-toothed face gear has the shape of a ring with face-gear teeth on sides thereof and with the coupling teeth on an internal diameter.
3. The gear transmission as claimed in claim 2, wherein the internal diameter of sets of face-gear teeth of the double-toothed face gear corresponds to an internal diameter of the ring.
4. The gear transmission as claimed in claim 1 wherein the length of the coupling toothing is greater than half the width of the sets of face gear teeth of the double-toothed face gear.
5. The gear transmission as claimed in one of the preceding claims, characterized in that the sets of face gear teeth of the double-toothed face gear match one another,

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and spaces between the teeth and the teeth are symmetrical with respect to a plane which lies centrally between the sets of teeth of the face gear teeth.

6. The gear transmission as claimed in claim 2 , wherein the ring has a thickness of at least four times the tooth height of one of the sets of teeth of the double-toothed face gear.

7. The gear transmission as claimed in claim 1 , wherein the third and fourth cylindrical pinions (5) and the double-toothed face gear (38) are helically toothed, and the third and fourth pinions are both either right-hand or left-hand pinions.

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8. The gear transmission as claimed in claim 1 , wherein the cylindrical pinions (5,6) are helically toothed, and the first and second cylindrical pinions are right-hand pinions when the third and fourth cylindrical pinions mounted on the same shaft are right-hand pinions, and are left-hand pinions when the third and fourth cylindrical pinions are left-hand pinions.

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9. The gear transmission as claimed in claim 8, wherein pitches of cylindrical pinions mounted on the same shaft are identical.

10. The gear transmission as claimed in claim 1 , characterized in that the double-toothed face gear (38) is slideably mounted on a housing of a differential of a vehicle.

Respectfully submitted,


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Version with Markings to Show Changes Made

1. A Gear transmission comprising: a first shaft (45), an intermediate shaft (44) which is parallel to the first shaft, a first cylindrical pinion (6) having a first set of teeth and which can- is mounted to rotate with the first shaft, a second cylindrical pinion (6) having a second set of teeth and mounted to ~~which can-rotate~~ with the intermediate shaft, the first and second sets of teeth ~~teething~~ of the first cylindrical pinion and the second cylindrical pinion having the same number of teeth and the same diameter and meshing with one another, a third cylindrical pinion (5) which is mounted to ~~can-rotate~~ with the first shaft, a fourth cylindrical pinion (5) which is mounted to ~~can-rotate~~ with the first shaft, a fifth ~~fourth~~ cylindrical pinion (5) which is mounted to ~~can-rotate~~ with the intermediate shaft, the sets of teeth ~~teething~~ of the third cylindrical pinion and the fourth cylindrical pinion having the same number of teeth and the same diameter, a double-toothed face gear (38) mounted between and respectively meshing with the sets of teeth ~~teething~~ of the third cylindrical pinion and the fourth cylindrical pinion, the double-toothed face gear being able to rotate about a second shaft which forms an angle with the first shaft, wherein the double-toothed face gear (38) is provided with a coupling teeth ~~teething~~ (39) for slideably coupling the rotation of the double-toothed face gear (38) to the rotation of the second shaft, and the direction of the coupling teeth ~~teething~~ being is perpendicular to a the plane of the coupling teeth ~~sets of~~ ~~teething~~ of the double-toothed face gear.
2. The gear transmission as claimed in claim 1, wherein the double-toothed face gear ~~is designed as~~ has the shape of a large-ring with the face-gear teeth ~~teething~~ on either sides thereof and with the coupling teeth ~~teething~~ on an the internal diameter.
3. The gear transmission as claimed in claim 2, wherein the internal diameter of the sets of face-gear teeth ~~teething~~ of the double-toothed face gear ~~more or less~~ corresponds to an the internal diameter of the large-ring.

4. The gear transmission as claimed in claim 1, ~~2 or 3,~~ wherein the length of the coupling toothing is greater than half the width of the sets of face gear teeth ~~sets of toothing~~ of the double-toothed face gear.
5. The gear transmission as claimed in one of the preceding claims, characterized in that the sets of face gear teeth ~~sets of toothing~~ of the double-toothed face gear match one another, and ~~the tooth spaces~~ between the teeth and the teeth are symmetrical with respect to a plane which lies centrally between the sets of teeth of the face gear ~~teeth toothing~~.
6. The gear transmission as claimed in ~~one of claims~~ claim 2-5, wherein the large ring has a thickness of at least four times the tooth height of one of the sets of teeth ~~toothing~~ of the double-toothed face gear.
7. The gear transmission as claimed in claim 1 ~~one of the preceding claims~~, wherein the third and fourth cylindrical pinions (5) and the double-toothed face gear (38) are helically toothed, and the third and fourth pinions are both either right-hand or left-hand pinions.
8. The gear transmission as claimed in claim 1 ~~one of the preceding claims~~, wherein the cylindrical pinions (5,6) are helically toothed, and the first and second cylindrical pinions ~~have the same direction as the third and fourth cylindrical pinions when mounted on the same shaft~~ are right-hand pinions when the third and fourth cylindrical pinions mounted on the same shaft are right-hand pinions, and are left-hand pinions when the third and fourth cylindrical pinions are left-hand pinions.
9. The gear transmission as claimed in claim 8, wherein the pitches of cylindrical pinions mounted on the same shaft are ~~is~~-identical.

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10. The gear transmission as claimed in claim 1 ~~one of the preceding claims~~, characterized in that the double-toothed face gear (38) is ~~mounted slideably~~ mounted on ~~a~~ the housing of a differential of a vehicle.